

Implementation of a Web Portal for Managing and Sharing Environmental Data

Prepared for:



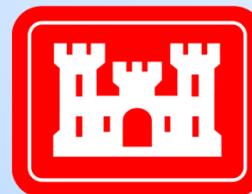
2011 DoD Environmental Monitoring & Data Quality Workshop

Presented by:



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Baltimore District

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Report Documentation Page

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Agenda

- Introduction
- USACE Philadelphia FUSRAP Web Portal
- USACE Baltimore Project Management Portal
- Questions



Introduction

- **Environmental Restoration Programs**
 - Generate a large volume of data to be analyzed
 - Technically and geographically diverse project teams
- **Programs have associated challenges for managing information**
 - Data Collection, Analysis & Reporting
 - Team Communication & Collaboration
- **Technology can help solve these challenges**
 - Centralized Web Portal
 - Discuss 2 Examples



USACE Philadelphia FUSRAP Web Portal

Background

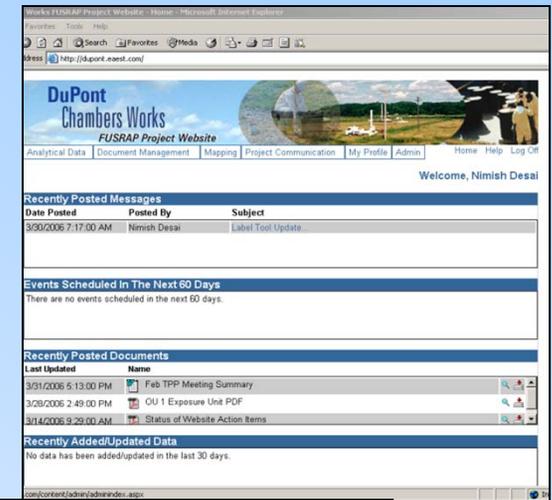
- **DuPont Chambers Works FUSRAP Site**
 - Project Site in New Jersey with ongoing data collection
- **Diverse Project Team**
 - Multi-disciplinary technical team
 - Team members located across the country
 - Unique data analysis needs
 - Coordination of input from team members critical



USACE Philadelphia FUSRAP Web Portal

Web Portal

- Implemented in 2004
- Centralized Project Management Portal
 - Environmental Data Reporting
 - Document Management
 - Mapping
 - Team Communication Tools
- Associated Public Outreach Website
 - Project Background
 - Public Meeting Announcements and Minutes



USACE Philadelphia FUSRAP Web Portal Environmental Data Reporting

- **Custom Reporting**
 - Standardized Chemical Data
 - User-Defined Query Criteria
- **Data Exporting**
 - Export Data in Multiple Formats
 - Used in External Applications (MS Excel, MS Access)
- **Standard Reports**
 - Quickly Generate Report Ready Chemical Tables

Address: http://dupont.east.com/content/analyticaldata/reportGrid_Main.aspx

Analytical Data Report

Area Of Concern	Location	Sample Date	Matrix	Start Depth	End Depth	Analyte
AOC 2: F Parking	2-SB-10	6/27/2007 12:00:00 AM	Soil	2.00	3.00	1,1,1-TRICHLOROETHANE
AOC 3: CDD	3-MW-13B	8/11/2005 12:00:00 AM	Groundwater			1,1,1-TRICHLOROETHANE
AOC 3: CDD	3-MW-14B	8/11/2005 12:00:00 AM	Groundwater			1,1,1-TRICHLOROETHANE
AOC 3: CDD	3-SB-30	6/27/2007 12:00:00 AM	Groundwater	12.00	13.00	1,1,1-TRICHLOROETHANE
AOC 3: CDD	3-SB-30	6/27/2007 12:00:00 AM	Soil	5.00	6.00	1,1,1-TRICHLOROETHANE
AOC 3: CDD	3-SB-30	6/27/2007 12:00:00 AM	Groundwater	12.00	13.00	1,1,1-TRICHLOROETHANE
AOC 3: CDD	3-SB-30					

Address: http://dupont.east.com/content/analyticaldata/reportGrid_Main.aspx

Geochemical Parameters of Unfiltered Groundwater

Boring	pH (I)	Conductivity (µS/cm)	Temperature (°C)	ORP (mV)	Turbidity (NTU)	Dissolved Oxygen (mg/L)
3-SB-01	8.7	0.95	18.6	219	30.7	1.93
3-SB-02	7.6	0.93	21.9	180	32.7	3.85
3-SB-03	7.0	0.47	19.7	177	42.4	2.74
3-SB-04	7.9	0.97	20.2	166	25.6	0.14
3-SB-05	7.3	0.76	21.2	150	3.86	0.14
3-SB-06	8.1	1.69	22.4	322	1.9	2.19
3-SB-07	7.1	3.65	19.7	219	248	3.71
3-SB-08	7.1	1.00	21.6	87.4	14.6	4.1
3-SB-09	6.6	1.44	21.5	95.7	59	1.7
3-SB-10	6.9	1.32	22.4	175.9	74.3	3.9
3-SB-11	5.3	1.88	20.6	221	71.4	2.96
3-SB-12	6.6	1.44	20.8	220	69.1	1.74
3-SB-13	8.4	2.93	19.2	201	99.9	3.96
3-SB-14	8.2	0.96	22.0	202	7.8	0.68
3-SB-15	4.9	3.34	19.6	183	90.9	0.41
3-SB-17	6.7	4.01	23.7	234	90.9	0.68
3-SB-18	8.4	2.42	23.0	228	95.9	0.79
3-SB-20	7.6	1.26	22.0	171	96.9	7.29
3-SB-24	7.6	1.68	20.1	154	96.9	0.9
3-SB-25	6.6	4.21	19.9	3.3	207	9.9
3-SB-31	4.2	2.21	12.4	120	20.9	4.79

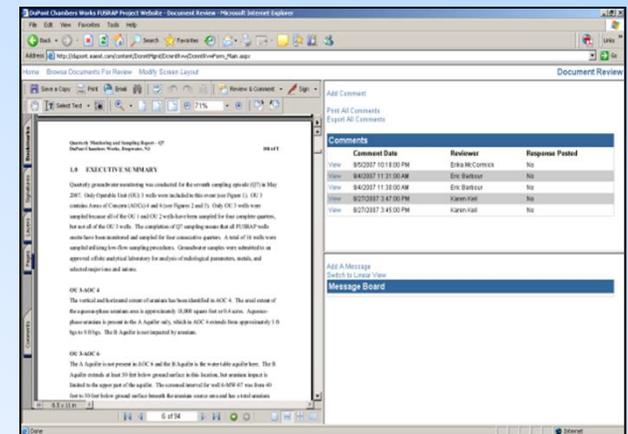
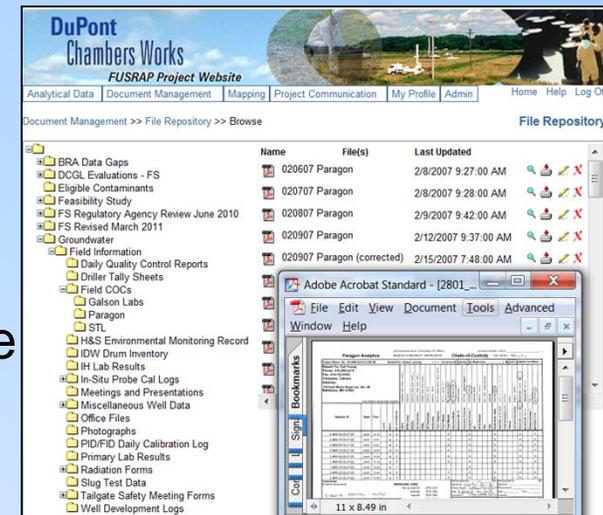


USACE Philadelphia FUSRAP Web Portal

Document Management

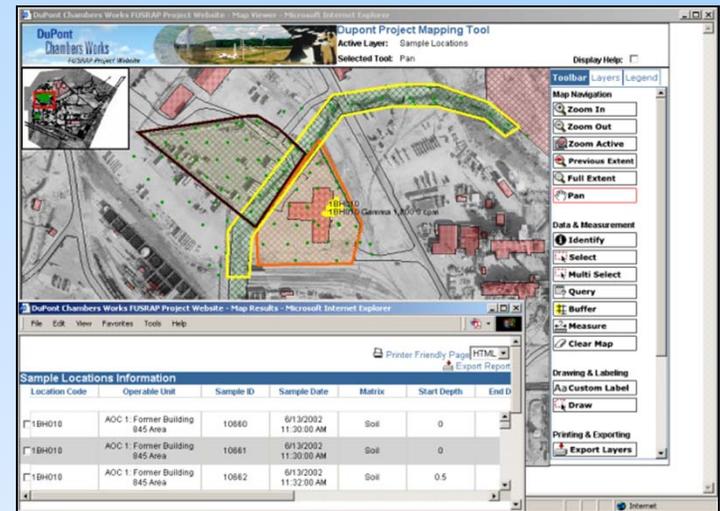
- **Central Repository for Project Documentation**
 - Browse by hierarchical folder structure
 - Full text, keyword search

- **Facilitated Document Review**
 - Assign reviewers and track comments
 - Capture all comments and responses in central location



USACE Philadelphia FUSRAP Web Portal Mapping

- **Basic Map Generation & Viewing**
 - User-Friendly Interface
 - No GIS Experience
 - Built on ESRI ArcIMS Technology
- **Basic Spatial Analysis**
 - Ability to Query & Display Chemical Data Results
 - Generate Maps Based on User Defined Criteria

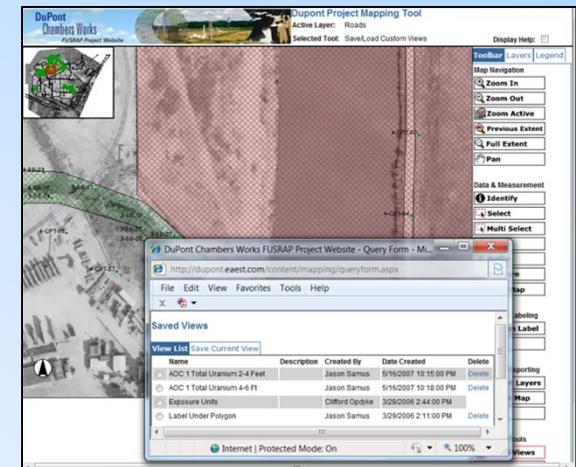
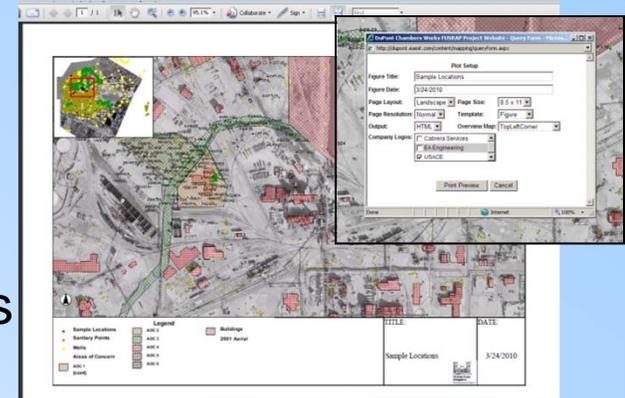


USACE Philadelphia FUSRAP Web Portal

Mapping (Cont.)

- **Figure Generation**
 - Generate printer-friendly PDF Figures
 - Multiple layouts and Figure/Paper Sizes

- **Team Collaboration**
 - Save custom maps for sharing with Team Members



USACE Philadelphia FUSRAP Web Portal Team Communication Tools

- **Team Directory**
 - Listing of All Team Members
- **Message Board**
 - Collaboration among Team Members on complex analysis, project reports and deliverables
- **Calendar of Events**
 - All Project Events, Milestones captured on Project Calendar

The screenshot displays two main components of the web portal. The top component is the 'Team Directory', which is a table listing team members with their names, organizations, email addresses, and phone numbers. The bottom component is the 'Message Board', which shows a list of messages and document reviews, including subjects like 'Test Message', 'Re-connecting', and 'Draft Feasibility Study for USACE Review'.

Name	Organization	Email Address	Phone Number
Beth Adams	CENAP	Beth.D.Adams@usace.army.mil	215-656-6719
Rick Allen	Cabrera Services	rallen@cabreraservices.com	866-569-0955
Garo Ayanian	Cabrera	gayanian@cabreraservices.com	
Eric Barbour	CENAB	eric.barbour@usace.army.mil	
Sam Bass	USACE - Omaha	Don.D.Bass@usace.army.mil	402-697-2654
Suzanne Beauchamp	USACE HQ	suzanne.m.beauchamp@usace.army.mil	202-761-4998
Tony Bednar	USACE- ERDC	Anthony.J.Bednar@usace.army.mil	601-634-3652
Jill Bennett	Cabrera	jbenett@cabreraservices.com	314-810-3375
Laura Bittner	CENAP	laura.d.bittner@usace.army.mil	(215) 656-6688
George Bock	CENAP - Program Manager	george.o.bock@usace.army.mil	(215) 656-6513
Greg Bright	Cabrera Services	gbright@cabreraservices.com	781-455-8787
James Bynum	CENAB	james.o.bynum@usace.army.mil	(410) 962-6803
Angela Cole Bonstead	USACE	angela.bonstead@usace.army.mil	314-331-8190
Angela Cole Bonstead	USACE	angela.bonstead@usace.army.mil	314-331-8190
Troy Cosgrove	CENAP	troy.t.cosgrove@usace.army.mil	(215) 656-6664
Nimish Desai	EA Engineering, Science and Technology, Inc.	ndesai@easet.com	263-223-3362

The Message Board section includes a 'Chem RA Group' with 'Topic Permissions' and a list of messages. Below that, there is a 'Document Reviews' section with a list of reviews, including subjects like 'TPP May 09', 'Draft Feasibility Study for USACE Review', and 'Draft Final RIR Backcheck Comments'. The bottom part of the screenshot shows a 'Draft Data Summary Report, Phase I Remedial Investigation, OU 3, DuPont Chambers Works FUSRAP Site (Document Review)' with a list of reviews.

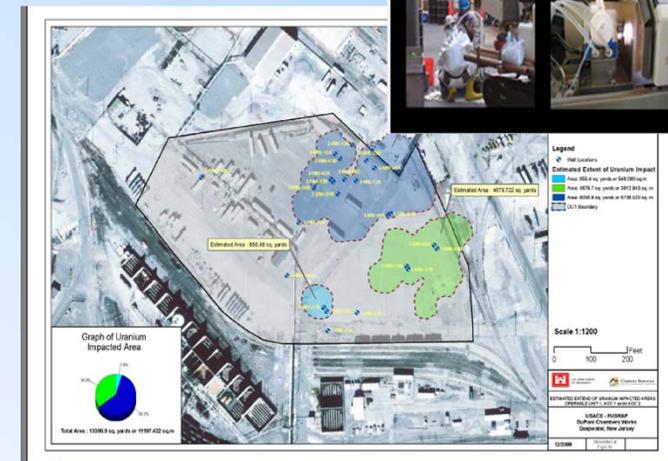
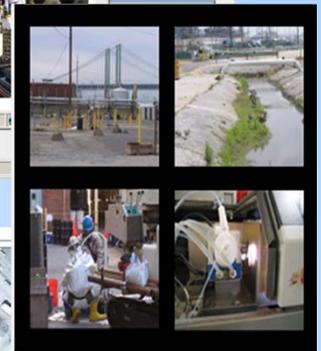
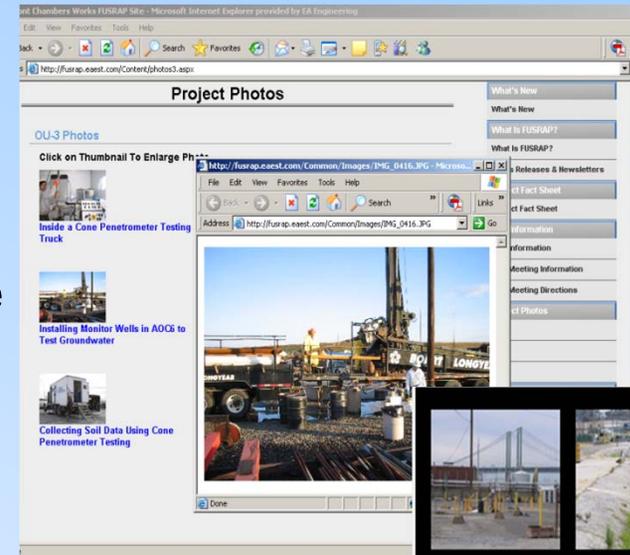


USACE Philadelphia FUSRAP Web Portal

Public Site

- **Public Information Portal**

- Provides information intended for the general public
- Project Background
- Meeting Announcements & Minutes
- Project Status
- Project Photos



USACE Baltimore Project Management Portal

Background

- **Two FUDS Program Sites**

- **Former Nansmond Ordnance Depot NPL Site**

- 20 years of historical analytical data in varying formats (hard copy, pdf, Word, Excel and Access).
 - Approximately 320,000 rows of analytical data
 - 18 GB of GIS data consisting of base map, historical aerial imagery, digital elevation model data and contours.
 - Approximately 800 individual historical files, as well as, 100 working files in various formats (Word, Excel, PDF).



- **NASA Wallops Flight Facility**

- 18 years of historical analytical data in varying formats (hard copy, pdf, Word, Excel and Access)
 - Approximately 200,000 rows of analytical data
 - 12 GB of GIS data consisting of base map, historical aerial imagery, digital elevation model data and contours.
 - Approximately 400 individual historical files, as well as, 80 working files in various formats (Word, Excel, PDF).



USACE Baltimore Project Management Portal

Background

- **Components**
 - Analytical Data Repository
 - Central database for all chemical, geological, and geophysical data
 - File Repository
 - Documents, files and data of varying formats
 - Mapping
 - Web-based GIS mapping for displaying environmental compliance information
 - Document Review
 - Web-based document review to capture and track comments on reports and documents



USACE Baltimore Project Management Portal

Background

- **Components (cont.)**
 - Project Communication
 - Project team coordination and communication tools including a Message Board, Team Directory, Calendar of Events
 - Home Page Dashboard
 - Automatically updated to display the status of data and recent updates to information.
 - Admin Record File
 - Public Outreach Website
 - Public access to specific files and documents stored in the File Repository



USACE Baltimore Project Management Portal

Background

- **Components (cont.)**
 - Automated Email Notifications
 - Automated alerts and reminders sent to system users via email
 - Online Help
 - Easy to use online help including detailed instructions on the use of each module
 - System Administration
 - Ability to administer users, permissions and configurations



USACE Baltimore Project Management Portal

Background

- **Additional Standards**
 - Standardized Data Structure – SEDD 5.2 for analytical data
 - ADR.NET - analytical data
 - SDSFIE 3.0 - GIS data
 - GeologyEDD and Geophysical EDD – field data
 - State and EPA environmental standards



USACE Baltimore Project Management Portal

Background

- **Additional Features**
 - GMS - groundwater modeling
 - gINT - boring logs and well construction diagrams
 - Oasis Montaj Viewer - geophysical data
- **Integration with existing USACE systems**
 - FUDS Record Management System
 - CorpsMap



USACE Baltimore Project Management Portal

Web Portal

- **Similar needs to FUSRAP project team**
 - Central repository for data & documents
- **Building on FUSRAP Portal Functionality**
 - Document Repository, Communication Tools
- **Additional, Unique Needs**
 - Support multiple sites and projects
 - Robust data visualization and analysis
 - Expanded environmental data QA/QC and reporting
 - Integration with external tools
 - Expanded mapping capabilities



USACE Baltimore Project Management Portal

Environmental Data Reporting

- **Custom & Standard Reporting**
 - Similar custom reporting for Analytical Data
 - Incorporate custom reporting for Geologic & Geophysical
 - Include a series of standard reports
- **Comparison to Environmental Standards**
 - Standards for 13 states and EPA
- **Trending & Graphing**
 - Ability to generate user-defined charts and graphs

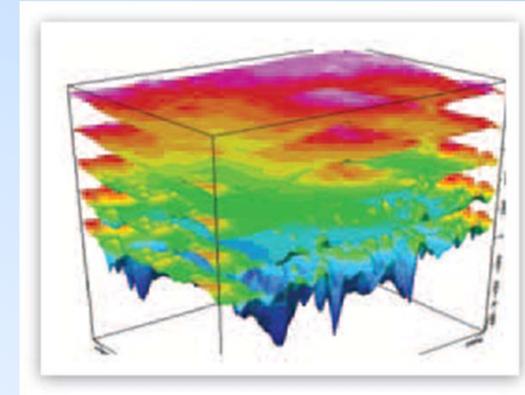
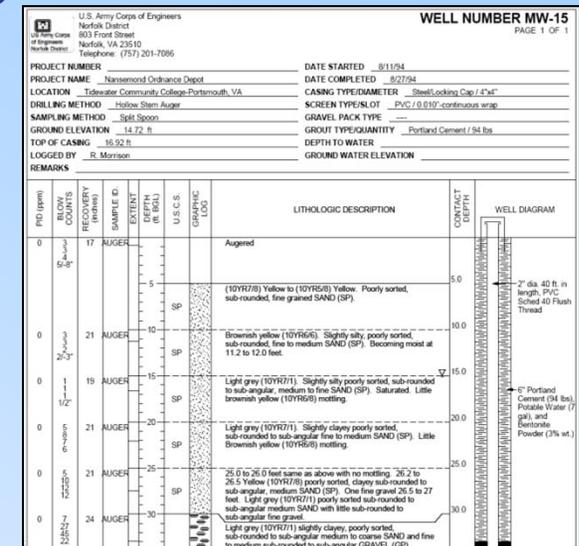
Field Name	Display	Filter	Filter Criteria
Area of Concern	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> AOC 1: Former Building 845 Area <input type="checkbox"/> AOC 2: F Parking Corral <input type="checkbox"/> AOC 3: CDD <input type="checkbox"/> AOC 4: Lagoon A <input type="checkbox"/> AOC 5: Building J-26
Location	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1-MW-06A <input type="checkbox"/> 1-MW-07B <input type="checkbox"/> 1-MW-08A <input type="checkbox"/> 1-MW-09B <input type="checkbox"/> 1-MW-10A
Location Type	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> A - Air Sample Location <input type="checkbox"/> CPT - CPT Test Location <input type="checkbox"/> GP - GeoProbe <input type="checkbox"/> IDW - Investigation derived waste <input type="checkbox"/> MW - Monitor Well
Aquifer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Begins With <input type="text"/>
TOC Elevation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	< <input type="text"/>
Project	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 01-3110.08-003 - DuPont OU2 <input type="checkbox"/> 04-3121.00-002 - DuPont OU3 <input type="checkbox"/> 04-3401.00-002 - DuPont OU1 <input type="checkbox"/> 04-3406 - DuPont GW SI <input type="checkbox"/> 04-3407.00-4 - DuPont GW Q5
Client Sample Code	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Begins With <input type="text"/>
Sample Date	<input checked="" type="checkbox"/>	<input type="checkbox"/>	< <input type="text"/>
Sample Type	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> DUP - Lab Duplicate <input type="checkbox"/> FD - Field Dup <input type="checkbox"/> FR - Field Replicate

Sample ID	Depth Interval (ft)	pH	Specific Gravity	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Atterberg Classification	Present Soil & Clay
3.00-4.00-04	4.00-6.00	6.3	2.69	30.1	35.2	19.3	CL*	99.1 CL*
3.00-4.00-03	4.00-6.00	4.3	2.72	24.8	30.9	17.3	CL	63.0 CL
3.00-4.00-06	6.00	4.4	2.71	30.2	37.6	19.9	CL	92.4 CL
3.00-4.00-04	4.00-6.00	4.4	2.76	16.3	27.6	14.2	CL	11.7 CL
5.00-6.00-03	4.00-6.00	6.3	2.68	16.1	18**	10*	SP	24.6 SP
5.00-6.00-04	4.00-6.00	6.2	2.64	17.5	26.9	16.7	CL	43.0 CL
5.00-6.00-04	4.00-6.00	6.2	2.64	17.5	26.9	16.7	CL	43.0 CL



USACE Baltimore Project Management Portal Integration With External Tools

- Provide Extended Functionality
 - Seamless integration with the Portal
- GMS
 - 2D, 3D, flow modeling and visualization
- gINT
 - Bore Logs, Well Construction Diagrams
- Montaj Viewer
 - Additional mapping, analysis and visualization functionality



USACE Baltimore Project Management Portal

Expanded Mapping Capabilities

- **ArcGIS Server Platform**
 - Industry Standard GIS Platform
 - Robust Spatial Visualization & Analysis
- **Remote Data Editing**
 - Ability to utilize sophisticated, desktop based GIS software to manage & analyze data
- **Simplified User Interface**
 - User-friendly web interface designed for non-GIS users



USACE Baltimore Project Management Portal Integrated Public Facing Website

- **Standardized Website Implementation**
 - Site Specific Website(s)
 - Dynamically generated through Web Portal
 - Site/Project Background, Documents, Photos, etc.
- **Data Automatically Available**
 - Linked to portal data and documents “flagged” for public viewing
 - Easy/Low maintenance; Dynamic content automatically included/removed



USACE Baltimore Project Management Portal

Other Features

- **Dashboard**
 - Site specific dashboard
 - Recent & important data summarized for quick access
- **Future Integration with Existing USACE Systems**
 - Designed for future integration to streamline data maintenance
 - FUDS Record Management System, CorpsMap

US Army Corps of Engineers BUILDING STRONG®

Dashboard Reports Maps Library Communication Tools

Former Nansemond Ordnance Depot (FNOD)

Former Nansemond Ordnance Depot (FNOD) covers approximately 975 acres bordered by the James and Nansemond Rivers. It was used during WWI and WWII for storage and shipment of munitions. In the Fifties the facility was operated by the Navy, and in the Sixties it was transferred from Federal ownership. [>>More](#)

Event Calendar View: [Month](#) | [List](#)

S	M	T	W	T	F	S
27	28	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9

Announcements

Message

- The website will be down for maintenance on 12/13/10
- The new "Project" module will be enabled on 12/13/10
- Any images to be added to the project must be submitted to Mike by 12/20/10 to be included in the next site publish.

Data Import Log

Data Import	Date Imported
Chemical	12/15/10
Geological	10/15/10
GIS Data	12/10/10

Message Board (Last 30 Days) [Go >](#)

Message Subject	Date
The revised user's guide...	12/8/10 10:19PM
It has been a while and...	12/8/10 10:19PM

Document Review [Go >](#)

Documents	Status
Groundwater Sampling...	Needs Approval
3-SB-158/20/2010	Pending

Recently Uploaded Documents [Go >](#)

- 3SS28 Surface Sample Location
- 3SB18 High Volume Air Sampler for Particulates

Team Directory [Go >](#)

User's Name	Phone Number
Smith, Mike	XXX-XXX-XXXX
Samsas, Jason	XXX-XXX-XXXX
Michener, Rebecca	XXX-XXX-XXXX
Patek, Nick	XXX-XXX-XXXX



Summary

- **Environmental Restoration Programs**
 - Generate a large volume of data to be analyzed
 - Technically and geographically diverse project teams
- **Programs have associated challenges for managing information**
 - Data Collection, Analysis & Reporting
 - Team Communication & Collaboration
- **Technology can help solve these challenges**
 - Centralized Web Portal



Questions ?

